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Europeanization of technology and innovation policies? Global Innovation

The Case of Biotechnology

Proposal for the sts-Workshop

Biotechnology is a new field of scientific research and industrial innovation activities that reaches far beyond national institutional frameworks and policies. The generation of new knowledge takes place in research institutions that are highly connected to international scientific discussions and cooperations with foreign counterparts. And the economic commercialization of biotechnology is determined by the activities of both established large-scale enterprises and new start-ups which compete as well as cooperate mainly on the international level.

Moreover, also the fields and levels of biotechnology policy have been subdivided in the last two decades. On the subnational level regional biotechnology clusters and innovation policies have emerged – and have constituted specific modes of regional interaction between firms, banks and venture-capital organizations, federations of industries, universities and local science parks. On the European level the European Community has installed specific biotechnology research programs and has set a legal framework for biotechnology research and production, field trials, gene food and patent protection. And on the international level Organizations like the World Trade Organization or the United Nations have coordinated the negotiations on agreements of intellectual property rights and the convention on Biological Diversity and Biosafety.

I will make a contribution to the question what remains under these conditions of specific national systems of (biotechnological) innovation and especially of distinct national technology policies – and argue on three levels:

- First: Comparative analysis show, that distinct national systems of innovation and policy-making – e.g. the traditional technological and industrial patterns of specialization, the structures and mentalities of the systems of education and of university research, the structures of industrial relations or the priorities of technology policy – had a great impact on the dynamics of technology transfer, the density of cooperations within the industry and between industry and universities, the philosophy behind national programs of r&d support or the society-wide controversies around this technology. And they constituted different, country-specific paths of biotechnology development.
- Second: National technology and innovation policies remain to be a major factor in the competitive struggle on technological leadership between nations. Every country has developed a specific set of technology and innovation initiatives and programmes with a sharp competitive focus: first of all they have to strengthen the national performance in the transnational innovation competition. In the age of internationalization they learn, of course, from each other and try to copy or adapt successive foreign models – but they do this with the aim to get competitive advantages.

- Third: Not only the discussions about the directions of innovation and technology policies but also the public discourses and controversies around the technology have, although they are influenced by foreign developments, a strong national bias and differ from country to country, even if these topics are negotiated and fixed into legal frameworks on the european or international level. National government agencies therefore play also an important role as negotiating parties in european or international negotiations – and advocate national interests and discussions on these levels of policy-making.

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